ABSTRACT

An apparatus is disclosed for the separation and extraction of a waste material into a solid, a liquid, and a gas phase utilizing a rotating drum that is sealed from the atmosphere. The exterior of the drum is heated and the waste material flows through the interior of the drum where the liquid components are vaporized and the solids are dried. The drum includes a oxidizing section where the hot dried solids, after the majority of the liquids have been vaporized, are mixed with gas containing oxygen for oxidizing the remaining particles of oxidizable material in the solids. Hot exhaust gases flow through the interior of the drum in a counter current direction of the flow of the solids to maintain an inert atmosphere in the heating section where the vaporization takes place and to prevent the condensables from flowing back over the solids and condensing. The vapors flow through a chamber that contains a hot oil spray for removing solids from the vapors, and then flow to a condenser. A selected portion of the oil spray stream containing solids removed from the vapors is selectively pumped to the cold end of the drum for removing the solids from the oil by vaporizing the oil or pumped to an internal drum on the hot end of the drum for removing the solids from the oil by cracking and/or vaporizing the oil.

08/407,762

K\Hogan\00700\app